

REMARKSStatus of the claims:

With the above amendments, claim 2 has been canceled, claims 1, 3-9 and 14 have been amended, claims 1 and 3-14 are pending and ready for further action on the merits. No new matter has been incorporated in any way by these amendments. The claims are rewritten to put the claims in a more clearly defined statutory class. Claim 1 has had the elements of claim 2 added to it. Accordingly, it is submitted that no new issues are presented by these amendments. Entry of the amendments and reconsideration in light of the following remarks is respectfully requested.

Disclosure Objections

The Examiner has objected to the paragraph starting on line 5 of page 15 in the written description saying that compounds (b)-(c) and (d)-(f) are not imidazoles. The Examiner seems to have overlooked the word "respectively", which occurs after the letter "(j)". However, Applicants have amended the paragraph to change the order of the paragraph so that "(b)-(c)" occurs directly after the word "amide", "(d)-(f)" occurs directly after the word "amine", "(g)" occurs immediately after the words "acid salt of the amine", "(h)-(i)" occurs immediately after the words "quaternary ammonium salt", and "(j)" occurs immediately

after the word "imidazole" to make it more explicit. Withdrawal of the objection is respectfully requested.

The Examiner has also objected to the formulas "(e)" and "(h)" on page 16 saying that "OCOR" should be rewritten as "COOR". As was pointed out in the response of June 21, 2001, these functional groups are not the same and that is why they were written differently. However, Applicants have canceled compound "(e)" so the objection with respect to this compound is moot. With respect to compound "(h)", the compound has been amended so that the bonding of compound "(h)" has been written out so that it is unambiguous that the ester is on the other side of the carbon. Withdrawal of the objection is respectfully requested.

**Rejections under 35 USC §112, second paragraph**

Claims 1-14 are rejected under 35 USC §112, second paragraph, as being indefinite.

The Examiner asserts that it is unknown what the phrase "material pulp" means in line 4 of claims 1 and 14. The Examiner does not know if "material pulp" is the same as "virgin pulp". As a point of clarification, "material pulp" which is described as pulp feedstocks in the specification is virgin pulp, i.e., pulps prepared from deinked pulps and the mixture thereof. The Examiner's attention is directed to page 22, line

2-9 in the written description for support thereof. Accordingly, it is believed that this phrase is no longer indefinite. Withdrawal of the rejection is respectfully requested.

The Examiner has also further rejected claims 1 and 14 as being indefinite. The Examiner does not know if claims 1 and 14 are claiming the pulp with the compound in it or just the compound. The Examiner has recommended rewriting these claims so that the preamble clearly states what is claimed. Accordingly, Applicants have rewritten the claims to more precisely state in the preamble the statutory class of these claims. Withdrawal of this rejection is respectfully requested.

The Examiner has also rejected claim 2, asserting that  $R_4$  should not include hydrogen because  $Y_1$  and/or  $Y_2$  can be hydrogen. Claim 2 has been canceled so that the rejection with respect to claim 2 is now moot and/or has been obviated. Withdrawal of the rejection is respectfully requested.

Claim 7 has also been rejected for reciting the same limitation as appears in claim 1. Claim 7 has been amended to make it independent by incorporating the elements of claim 1 into it. Thus, it is believed that this rejection has been obviated. Withdrawal of the rejection is respectfully requested.

Rejections under 35 USC §102

Claims 1-14 are rejected under 35 USC §102(b) as being anticipated by, or in the alternative, under 35 USC §103(a) as being unpatentable over Hutcheson '334 (US Patent No 5,393,334) or Hutcheson '753 (US Patent No 5,417,753) or Padbury '967 (US Patent No 2,772,967). The Examiner asserts that Hutcheson '334 and Hutcheson '753 disclose amides as claimed. Applicants submit that claim 14 does not have the word "amide" in it and thus should not be rejected on this basis.

Claim 1 has been amended to incorporate the elements of claim 2 and further amended to delete the "(C) amide and (D) amine" added from the elements of claim 2.

In claim 14 "(C) amine" has been deleted.

Hutcheson '334 and Hutcheson '753 describe a diamine having two nitrogens such as aminoethylethylamine (see column 4, line 2-10, column 6, line 3 structural formula) that is applicable to compound (c) of this invention (see page 16 of the written description). However, the amendment to claims 1 and 14 have removed amines as a possibility for the compound added to material pulp. Thus, Hutcheson '334 and Hutcheson '753 no longer anticipate the instant invention nor do Hutcheson '334 and Hutcheson '753 render obvious the instant invention because Hutcheson '334 and Hutcheson '753 fail to disclose or suggest the elements of the instant invention. Withdrawal of the

rejection with respect to Hutcheson '334 and Hutcheson '753 is respectfully requested.

Padbury '967 discloses a reaction between an alkanolamine and a fatty acid (see column 2, lines 64-69 in Padbury '967). Claims 1 and 14 have been amended to remove amides and amines as possibilities for the compound added to the material pulp. Thus, Padbury '967 also no longer anticipates the instant invention nor can Padbury '967 render obvious the instant invention because Padbury '967 does not disclose or suggest the elements of the instant invention. Withdrawal with the rejection with respect to Padbury '967 is respectfully requested.

With the above remarks and amendments, it is believed that the claims, as they now stand, define patentable subject matter such that a passage of the instant invention to allowance is warranted. A Notice to that effect is earnestly solicited.

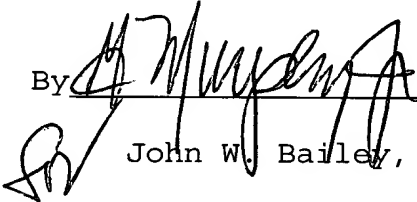
If any questions remain regarding the above matters, please contact Applicant's representative, John W. Bailey, in the Washington metropolitan area at the phone number listed below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By

 #28977  
John W. Bailey, #32,881

CS  
JWB/TBS/crt

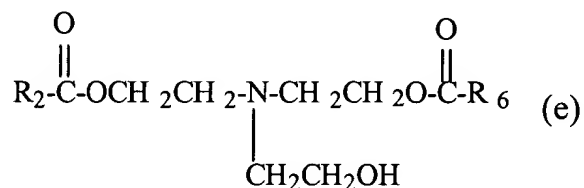
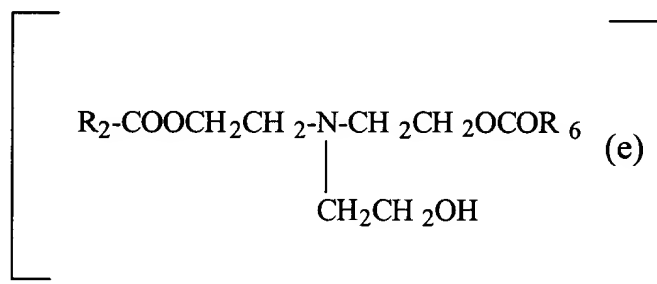
P.O. Box 747  
Falls Church, VA 22040-0747  
(703) 205-8000

VERSION WITH MARKINGS TO SHOW CHANGES MADEIN THE WRITTEN DESCRIPTION:

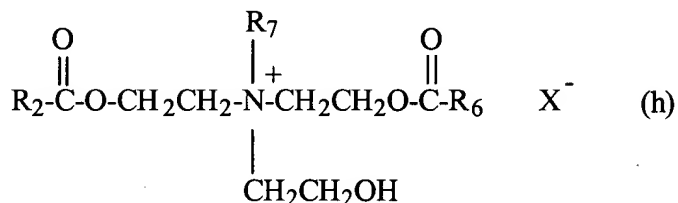
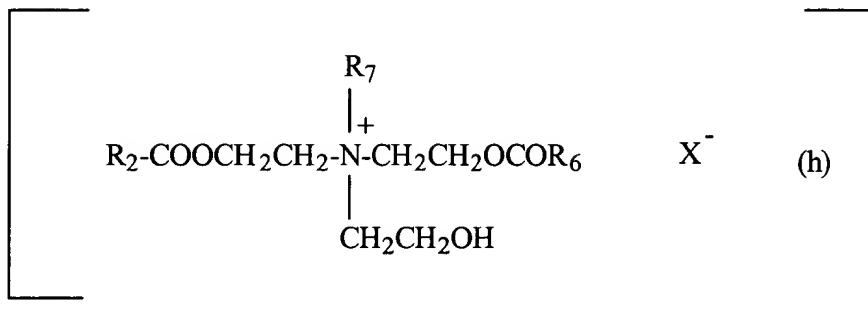
The paragraph beginning on page 15, line 5, has been amended as follows:

--(C) The amide, (b)-(c), (D) the amine, (d)-(f), (E) the acid salt of amine, (g), wherein the acid salt of amine may be ionized or non-ionized, (F) the quaternary ammonium salt, (h)-(i), (G) the imidazole (j) may be cited as [a] compounds represented by the following formulas [(b)-(c), (d)-(f), (g), (h)-(i), and (j), respectively. The acid salt of amine may include ionized or non-ionized one]---

Formula (e) on page 16 has been amended as follows.



Formula (h) on page 16 has been amended as follows.



**IN THE CLAIMS:**

The claims have been amended as follows.

1. (Twice Amended) A composition for improving [paper  
quality improver for] paper making[, quality comprising;  
a compound and a pulp blend, wherein

[which is internally added to a] said pulp blend  
contain[ing] a deinked pulp in an amount of 10% or more by  
weight in a material pulp, [either before or in a paper making  
step;]

and

[which paper quality improver comprises a] said compound

[having] has a lyotropic degree as defined below of  
not less



than 4%, and

[which] said compound provides at least two properties selected from the following paper quality improving properties (i) to (iii):

(i) a standard improved bulky value of at least 0.02 g/cm<sup>3</sup>,

(ii) a standard improved brightness of at least 0.5 point,

and

(iii) a standard improved opacity of at least 0.5 point;

and wherein the

$$\text{lyotropic degree (\%)} = (\alpha_0 - \alpha) / \alpha_0 \times 100$$

wherein  $\alpha[:]$  is the water content in a wet sheet obtained by

adding 5 parts by weight of the compound, which is the paper quality improver for the paper making to 100 parts by weight of the pulp blend and subjecting the pulp blend to papermaking; and

$\alpha_0[:]$  is the water content in a wet sheet obtained by

subjecting the pulp blend to papermaking without adding the compound[, which is the paper quality improver for the papermaking,] to the pulp blend wherein said compound can be added to the material pulp either before or during a paper making step and wherein the compound is selected from the group consisting of (A) organosiloxane, (B) glyceryl ether, (C) acid salt of amine, (D) quaternary ammonium salt, (E) imidazole, (F) ester of polyhydric alcohol and fatty acid and (G) alkylene

oxide-added ester being an ester derived from polyhydric alcohol and fatty acid and having from more 0 mole to less 12 moles on average of C<sub>2-4</sub> alkylene oxide group per 1 mole of the ester.

3. (Twice Amended) [A] The composition [paper quality improver for papermaking as claimed in] of Claim 1 or 2, which further comprises at least one compound selected from (a) anionic surfactant and (b) cationic surfactant.

4. (Twice Amended) [A] The composition [paper quality improver for papermaking as claimed in] of claim 1 or 2, which provides a standard improved bulky value of at least 0.02 g/cm<sup>3</sup>.

5. (Twice Amended) [A] The composition [paper quality improver for papermaking as claimed in] of Claim 1 or 2, which provides a standard improved brightness of at least 0.5 point.

6. (Twice Amended) [A] The composition [paper quality improver for papermaking as claimed in] of Claim 1 or 2, which provides a standard improved opacity of at least 0.5 point.

7. (Twice Amended) A method for producing a pulp sheet comprising the steps of

taking a composition for improving paper making quality wherein  
said composition comprises a compound and a pulp blend,  
wherein

said pulp blend contains a deinked pulp in an amount of 10%  
or more by weight in a material pulp and

said compound has a lyotropic degree as defined below of  
not less than 4%, and

said compound provides at least two properties selected  
from the following paper quality improving properties (i) to  
(iii):

(i) a standard improved bulky value of at least 0.02 g/cm<sup>3</sup>,

(ii) a standard improved brightness of at least 0.5 point,

and

(iii) a standard improved opacity of at least 0.5 point;

and wherein the

$$\text{lyotropic degree (\%)} = ( \alpha_0 - \alpha ) / \alpha_0 \times 100$$

wherein

$\alpha$  is the water content in a wet sheet obtained by adding 5  
parts by weight of the compound to 100 parts by weight of the  
pulp blend and subjecting the pulp blend to papermaking; and  
 $\alpha_0$  is the water content in a wet sheet obtained by subjecting the  
pulp blend to papermaking without adding the compound to the  
pulp blend [, wherein the paper quality improver for papermaking  
as defined in Claim 1 is] and

[added] adding the compound to the material pulp before or [in] during the papermaking step and producing a pulp sheet.

8. (Twice Amended) [A] The method for producing a pulp sheet according to claim 7, [wherein the paper quality improver for papermaking as defined in Claim 1 and] further comprising adding an agent that [for promoting] promotes [to fix] fixation of the [paper quality improver for papermaking] compound onto the pulp sheet, said compound being [are] added either before or during [in] the papermaking step.

9. (Twice Amended) A pulp sheet produced by adding the compound [paper quality improver for papermaking] as defined in Claim 1 before or [in] during the papermaking step.

14. (Amended) A composition for improving [paper quality improver for] paper making[,] quality comprising:  
a compound and a pulp blend, wherein

[which is internally added to a] said pulp blend contain[ing]s a deinked pulp in an amount of 10% or more by weight in a material pulp, [either before or in a paper making step;]  
and

[which paper quality improver comprises a] said compound

[having] has a lyotropic degree as defined below of not less

than 4%, and

[which] said compound provides at least two properties selected from the following paper quality improving properties (i) to (iii):

(i) a standard improved bulky value of at least 0.02 g/cm<sup>3</sup>,

(ii) a standard improved brightness of at least 0.5 point, and

(iii) a standard improved opacity of at least 0.5 point; and wherein the

$$\text{lyotropic degree (\%)} = ( \alpha_0 - \alpha ) / \alpha_0 \times 100$$

wherein  $\alpha[:]$  is the water content in a wet sheet obtained by

adding 5 parts by weight of the compound, which is the paper quality improver for the paper making to 100 parts by weight of the pulp blend and subjecting the pulp blend to papermaking; and

$\alpha_0[:]$  is the water content in a wet sheet obtained by

subjecting the pulp blend to papermaking without adding the compound[, which is the paper quality improver for the papermaking,] to the pulp blend wherein said compound is added to the material pulp before a paper making step

[. The paper quality improver for papermaking as claimed in Claim 1,] and wherein the compound is selected from the group

consisting of (A) organosiloxane, (B) glyceryl ether, (C) [amine, (D)] acid salt of amine, (D) [(E)] quaternary ammonium salt, (E) [(F)] imidazole, (F) [(G)] ester of polyhydric alcohol and fatty acid and (G) [(H)] alkylene oxide-added ester being an ester derived from polyhydric alcohol and fatty acid and having from more 0 mole to less 12 moles on average of C<sub>2-4</sub> alkylene oxide group per 1 mole of the ester.